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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,000	11/21/2003	Boerge Kringelum	KRINGELUM=1B	7648
1444 7590 12/12/2007 BROWDY AND NEIMARK, P.L.L.C. 624 NINTH STREET, NW SUITE 300 WASHINGTON, DC 20001-5303			EXAMINER ARIANI, KADE	
			ART UNIT 1651	PAPER NUMBER
			MAIL DATE 12/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/718,000	KRINGELUM ET AL.	
	Examiner	Art Unit	
	Kade Ariani	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-45 is/are pending in the application.
- 4a) Of the above claim(s) 18-24 and 35-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment filed on 09/24/2007, has been received and entered.

Claims 25-34 are pending in this application and were examined on their merits.

37 CFR 1.132 Declaration

The declaration filed on 09/24/2007 under 37 CFR 1.132 has been considered and is effective to overcome the Donnelly reference.

Applicant's arguments filed on 09/24/2007 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall V. M. (FEMS Microbiology Letters, 1987, Vol. 46, p.327-336) in view of De Vos et al. (Antonie van Leeuwenhoek, 1996, Vol. 72, p. 223-242) and further in view of Wessels et al. (US Patent No. 5,580,787).

Claims 25-34 are drawn to a starter culture composition comprising a lactic acid bacterium and a lactic acid bacterial helper organism that is defective in its pyruvate metabolism and does not produce lactic acid, the helper organism is defective in its ability to produce at least one enzyme selected from the group consisting of pyruvate formate lyase, pyruvate dehydrogenase, lactate dehydrogenase, acetolactate synthetase, second acetolactate synthetase, acetolactate decarboxylase and diacetyl reductase, the helper organism is *Lactococcus lactis* subsp. *lactis* strains DN223 and DN224, in the helper organism the gene coding for an enzyme that is capable of regenerating NAD^+ is over-expressed, the enzyme catalyses the reduction of O_2 to H_2O or H_2O_2 , the enzyme is NADH: H_2O oxidase, the helper organism is an Ldh (-) strain, and the composition comprises two or more different lactic acid bacterial strains.

Marshall teaches mixed starter culture composition comprising two lactic acid bacterial strains capable of enhancing the growth and metabolic activity of one another. Marshall teaches as separate cultures, the growth of these strains was poor, but they grew well together and their complementary metabolism resulted in a mild, well-flavored product with good aroma (p.333 2nd column, 2nd paragraph, lines 1-12).

De Vos et al. teach lactic acid bacteria defective in its ability to produce lactate dehydrogenase (an Ldh (-) strain), and wherein the gene coding for NADH: H_2O oxidase is over-expressed (p.238, 1st column, lines 24-30). De Vos et al. further teach methods for metabolic engineering and rerouting of metabolic processes in lactic acid bacteria (p.232 column, 2nd paragraph, also p.233, 1st column, 2nd paragraph).

Wessels et al. teach, presently used procedures for developing useful lactic acid bacteria cultures by selection of naturally occurring strains is cumbersome and costly. Furthermore, it has proven difficult to provide starter cultures strains which combine all required characteristics at an optimal level. Presently, this problem is usually solved by the use of starter cultures comprising a multiplicity of selected lactic acid bacterial strains each having one or several of the characteristics desirable for a particular food products (column 1, lines 51-60).

Therefore, it would have been obvious to one of the ordinary skill in the art to use the teachings of de Vos et al. and Marshall to provide a starter culture composition comprising a lactic acid bacterium and a lactic acid bacterial helper organism capable of enhancing the growth rate and metabolic activity of the lactic acid bacterium. Since as taught by Wessel et al. it has proven difficult to provide starter cultures strains which combine all required characteristics at an optimal level. The motivation would be the use of starter cultures comprising a multiplicity of lactic acid bacterial strains each having one or several of the characteristics desirable for a particular food products

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kade Ariani whose telephone number is (571) 272-6083. The examiner can normally be reached on 9:00 am to 5:30 pm EST Mon-Fri.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kade Ariani
Examiner
Art Unit 1651



Leon B. Lankford Jr.
Primary Examiner
Art Unit 1651